<u>REMARKS</u>

Claims 1, 2, and 4-17 are pending. Claim 3 is canceled. The Final Office Action sent on April 30, 2007, rejects Claims 1, 2, 4-8, 10, and 17 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,134,246 to Cai et al. (hereinafter "Cai et al."), in view of U.S. Patent No. 6,222,858 to Counterman (hereinafter "Counterman"), in view of U.S. Patent No. 6,061,354 to Morikawa et al. (hereinafter "Morikawa et al."), and further in view of U.S. Patent No. 6,963,570 to Agarwal (hereinafter "Agarwal"). Claim 9 is rejected under 35 U.S.C. § 103(a) over Cai et al., in view of Counterman, in view of Morikawa et al., in view of Agarwal, and in further view of U.S. Patent No. 6,590,909 to Stacey et al. (hereinafter "Stacey et al."). Claims 11-16 are rejected under 35 U.S.C. § 103(a) as unpatentable over Cai et al., in view of Counterman. Claims 11 and 15 have been amended. Claims 1, 2, 4-10, 12-14, 16, and 17 are as previously presented.

Applicants respectfully request withdrawal of the above-identified rejections and allowance of the pending claims.

Prior to discussing in detail why applicants believe that all of the claims in this application are allowable over the cited and applied references, brief summaries of the disclosed subject matter and of the cited and applied references are provided. The following discussions of the disclosed subject matter and the cited and applied references are not provided to define the scope or interpretation of any of the claims. Instead, the discussions are provided to help the U.S. Patent and Trademark Office better appreciate important claim distinctions discussed hereafter.

<u>Summary of the Disclosed Subject Matter</u>

Disclosed are a method and systems for conveying data between at least two users within a system comprising at least one low-bit-rate artery and one or more standard-bit-rate arteries. Packets containing data from an originating user that have been compressed are formed into a

Common Part Sublayer (CPS) packets and are inserted into basic transmission units. The basic transmission units are then sent on a standard-bit-rate artery to a low-bit-rate artery. Before entering the low-bit-rate artery, each CPS packet is removed from a basic transmission unit. The removed CPS packet and other CPS packets coming from different originating users are multiplexed into a basic transmission unit of a virtual circuit across the low-bit-rate artery and then transmitted. At the end of the low-bit-rate artery, the basic transmission unit of the virtual circuit is received and a destination field of the basic transmission unit of the virtual circuit is translated. Based on the translation, the basic transmission unit of the virtual circuit is transmitted to a destination. At the end of the low-bit-rate artery, the CPS packets from different originating users are extracted, and each CPS packet is put into a basic transmission unit for a network downstream from the low-bit-rate artery and sent across the downstream network.

Summary of Cai et al.

Cai et al. is directed to inverse multiplexing within an ATM environment. A multiplexed stream of ATM cells is sent to an ATM switch over high bandwidth. The high bandwidth stream is demultiplexed and the demultiplexed cells are then transmitted over multiple low bandwidth lines to another ATM switch. The ATM cells received at the switch at the end of the low bandwidth lines are multiplexed and sent over another high bandwidth line.

Rejections Under 35 U.S.C. § 103(a) Over Cai et al. as the Primary Reference

As noted above, Cai et al. is used as the primary reference in all rejections under 35 U.S.C. § 103(a). Only Cai et al. will be discussed as it not only fails to teach or suggest the claimed subject matter, but it also teaches away from the recitations of the pending claims. While the remaining cited references are not discussed for the sake of brevity, it is noted that none of the cited references alone or in combination teach or suggest the claimed subject matter.

Claims 1, 2, and 4-10

Claim 1 recites:

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1.   A method for conveying data between at least two users having a connection in a communications network comprising at least one low-bit-rate artery, one or more arteries working at standard bit rates, a basic transmission unit, at least two adaptation units, and at least one adaptation layer protocol, the data to be transmitted taking the form of packets having a size smaller than the size of the basic transmission unit, the method comprising:

upstream from the low-bit-rate artery at an adaptation unit assigned to an originating user, collecting data from the originating user and converting said data into coded frames using a compression algorithm;

forming a packet of application data comprising a number of coded frames;

forming a Common Part Sublayer packet comprising the packet of application data;

inserting the Common Part Sublayer packet into a basic transmission unit at a rate of one packet per unit and sending said unit through a network to a first end of the low-bit-rate artery;

at the first end of the low-bit-rate artery, extracting multiple Common Part Sublayer packets from basic transmission units received from different originating users and multiplexing said packets in a basic transmission unit of a virtual circuit set up between the first end and a second end of the low-bit-rate artery according to the adaptation layer protocol;

sending the basic transmission unit of the virtual circuit from the first end to the second end of the low-bit-rate artery;

at the second end of the low-bit-rate artery, receiving the basic transmission unit of the virtual circuit and extracting the Common Part Sublayer packets from said unit by demultiplexing the packets from said unit;

determining the connection to which each of the Common Part Sublayer packets belong and inserting each Common Part Sublayer packet into a basic transmission unit at a rate of one packet per unit for transmission to an addressee user;

sending said basic transmission unit through a network downstream from the low-bit-rate artery to an adaptation unit assigned to the addressee user; and

at the adaptation unit assigned to the addressee user, extracting the Common Part Sublayer packet from the basic transmission unit. (Emphasis added.)

The Office Action asserts that Cai et al. teaches all of the recitations in Claim 1 with the

exception of teaching each link between the two atm nodes having different bit rates (higher and

lower) and asserts that Morikawa et al. teaches this deficiency. Applicants respectfully disagree.

Cai et al. demultiplexes data from a high speed line to multiple low speed lines. (Cai

et al., Figures 1 and 3.) The data on the high speed line arrives to a switch already multiplexed.

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After receiving the data, the switch demultiplexes the data and switches it to individual low speed lines. At the end of the low speed lines another switch takes the demultiplexed data and multiplexes it back into a single data stream.

On the other hand, applicants' claimed subject matter discloses taking packets of data from one or more standard speed lines, packaging that data together in a single basic transmission unit, and transmitting it over a low-speed line. The difference from the claimed subject matter is that Cai et al. takes multiplexed data from high speed lines, demultiplexes it, and sends it across low speed lines; applicants' claimed subject matter takes packets of data from one or more high speed lines and packages them to send over a low speed line. Accordingly, Cai et al. not only fails to teach that each link between two atm nodes having different bit rates (higher and lower) as acknowledged by the Office Action, but also fails to teach or suggest the following recitations of Claim 1: "at the first end of the low-bit-rate artery, extracting multiple Common Part Sublayer packets from basic transmission units received from different originating users and multiplexing said packets in a basic transmission unit of a virtual circuit set up between the first end and a second end of the low-bit-rate artery according to the adaptation layer protocol;" and "at the second end of the low-bit-rate artery, receiving the basic transmission unit of the virtual circuit and extracting the Common Part Sublayer packets from said unit by demultiplexing the packets from said unit."

In fact, as Cai et al teaches the opposite structure and functionality, it actually teaches away from the claimed subject matter. Without destroying the basic structure of Cai et al., there is no way to arrive at applicants' claimed subject matter through any combination of the cited references. Moreover, none of the cited references make up for these deficiencies. As a result, applicants respectfully submit that Claim 1 is allowable.

Claims 2 and 4-10 depend from Claim 1. Applicants respectfully submit that these claims are allowable at least by virtue of these dependencies, as well as by virtue of the other

limitations set forth therein. Accordingly, applicants respectfully submit that Claims 2 and 4-10 are patentable, and withdrawal of the 35 U.S.C. § 103(a) rejection with respect to these claims is merited.

<u>Claims 11-17</u>

Claim 11 and 15, as amended, recite:

> 11.   A device for data transmission between at least two users in a communications network comprising at least one low-bit-rate artery and one or more standard-bit-rate arteries, a basic transmission unit, and supporting at least one adaptation layer protocol, wherein the device comprises at least one multiplexer device having a packetization function and a switching function, wherein the switching function of the multiplexer device is adapted to the switching of packets conveyed in the basic transmission units according to the adaptation layer protocol among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, *and where the data on the one or more standard-bit-rate arteries are multiplexed onto the one low-bit-rate artery.*

> 15.   A network to convey data in a connection between at least two users, the network comprising one or more low-bit-rate arteries and one or more standard-bit-rate arteries, at least one adaptation layer protocol and one basic transmission unit,
> wherein the network comprises at least one device comprising at least one multiplexer device having a packetization function and a switching function, wherein the switching function of the multiplexer device is adapted to the switching of packets conveyed in the basic transmission units according to the adaptation layer protocol among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, *and where the data on the one or more standard-bit-rate arteries are multiplexed onto the one low-bit-rate artery*, this device being positioned upstream to and downstream from a low-bit-rate artery.

As similarly set forth above with respect to Claim 1, Cai et al. takes multiplexed data from high speed lines, demultiplexes it, and sends it across low speed lines, whereas applicants' claimed subject matter as recited in amended Claims 11 and 15 clarifies that "the data on the one or more standard-bit-rate arteries are multiplexed onto the one low-bit-rate artery." Cai et al. fails to teach or suggest this recitation of amended Claims 11 and 15 and in fact teaches away from claimed subject matter. Without destroying the basic structure of Cai et al., there is no way

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to arrive at applicants' claimed subject matter as set forth in Claims 11 and 15 through any combination of the cited references. Moreover, none of the cited references make up for these deficiencies. As a result, applicants respectfully submit that Claims 11 and 15 are allowable.
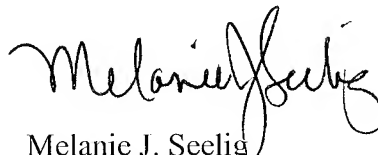
Claims 12-14 and 16-17 depend from Claims 11 and 15, respectively. Applicants respectfully submit that these claims are allowable at least by virtue of these dependencies, as well as by virtue of the other limitations set forth therein. Accordingly, applicants respectfully submit that Claims 12-14 and 16-17 are patentable, and withdrawal of the 35 U.S.C. § 103(a) rejection with respect to these claims is merited.

CONCLUSION

The foregoing amendment and response is submitted as a full and complete response to the final Office Action mailed April 30, 2007. If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any informalities that can be corrected by an Examiner's amendment, please feel free to call applicants' undersigned attorney.

Respectfully submitted,

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